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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,912	03/14/2001	Philip Kossin	KOS 0002P	6360

31718 7590 11/17/2004

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EXAMINER

MISLEH, JUSTIN P

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 11/17/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/808,912

Applicant(s)

KOSSIN, PHILIP

Examiner

Justin P Misleh

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 - 25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 8 - 10, 12 - 15, 17, 19, 20, and 22 - 25 is/are rejected.
- 7) ☒ Claim(s) 2 - 7, 9, 11, 16, 18, 21, and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

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Extensive mechanical and design details of apparatus should not be given.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

3. The disclosure is objected to because of the following informalities: dated information.

More specifically, Application "09/333,825" is now U.S. Patent No. 6,795,110 B1 and should be updated in the specification as such.

Appropriate correction is required.

4. The disclosure is objected to because of the following informalities: minor typographical errors.

More specifically, on page 21 of the specification, after careful consideration, the following should be corrected: on lines 10 and 19, "Figure 3" should be changed to read "Figure 2"; on line 32, "Figure 4" should be changed to read "Figure 3"; and on line 13, "lever 1612" should read "lever 1613".

More specifically, on page 23 of the specification, after careful consideration, the following should be corrected: on line 23, "Reed relay 1" should be changed to read "Reed relay 1814".

More specifically, on page 24 of the specification, after careful consideration, the following should be corrected: on line 24, "charging circuit 1835" should be changed to read "charging circuit 1833".

Appropriate correction is required.

### *Drawings*

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "181" has been used to designate both a power switch (figure 1) and a battery (figure 5).
6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 173 (figure 3), 174 (figures 3 and 8), and 1001 (figure 10).
7. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the Examiner, the

Applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

8. **Claims 2, 9, and 25** are objected to because of the following informalities: containing subject matter not in the specification.

More specifically, the claim language includes the following features that are not immediately apparent in the specification: “an antenna”; “hydrocarbon liquids”; “epoxy resin”, and “casting”. The Applicant is asked to identify the above features in the specification or if need be make appropriate amendments. The Applicant is reminded that when making amendments to include a statement that no new matter has been added. For the purposes of examination, the Examiner will attempt to match claim features to similar features clearly found within the specification.

Appropriate correction is required.

9. **Claim 18** is objected to because of the following informalities: minor typographical error.

As stated, Claim 18 depends from Claim 117. Clearly there is no Claim 117; thus, it is apparent that Claim 18 was meant to depend from Claim 17. For the purposes of examination, Claim 18 will be interpreted to depend from Claim 17.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. **Claims 19 and 22 – 25** are rejected under 35 U.S.C. 102(b) as being anticipated by Fraker et al.

12. For **Claim 19**, Fraker et al. disclose, as shown in figures 1 and 5 and as stated in column 3 (lines 4 – 40), a digital electronic camera (11, 13, and 16) characterized in that the optics (13 and 16) and electronics (11) of the camera are permanently within a solid mass of dielectric material (plastic material) and the camera contains essentially not gases whatsoever (all the interior space of a housing encapsulating the camera and its components is filled with the plastic material, see column 3); wherein the camera (11, 13, and 16) may be suitably immersed to a depth in the ocean without crushing.

13. As for **Claim 22**, Fraker et al. disclose, as stated in column 3, that the camera is potted inside and out in a solid block of epoxy encapsulant (see column 3, lines 7 – 13). Epoxy is a form of plastics and Fraker et al. accommodates any type of plastics.

14. As for **Claim 23**, Fraker et al. disclose, as stated in column 3, that the camera is potted in a solid block of silicone encapsulant (see column 3, lines 7 – 13). Fraker et al. specifically states silicone.

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15. As for **Claim 24**, Fraker et al. disclose, as stated in column 3, that the camera is potted in a semi-rigid block of plastic encapsulant. Fraker et al. accommodates any type of plastics (see column 3, lines 7 – 13).

16. As for **Claim 25** (please see objection above), Fraker et al. disclose, as shown in figure 1, that the camera body (11; including electronics and imager) are within the solid encapsulant (12); but camera optics (lens cover 15) is external to the camera body (11) and immersed totally in a water environment.

***Claim Rejections - 35 USC § 103***

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. **Claims 1, 10, 12 – 15, and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamata et al. in view of Ford et al.

19. For **Claim 1**, Kamata et al. disclose, as shown in figures 2, 3, and 4 and as stated in columns 2 (lines 52 – 57), 3 (lines 15 – 26 and 47 – 67), and 4 (lines 1 – 43), a waterproof digital electronic camera system comprising:

a digital electronic camera (camera 6) having a digital electrical signal interface (signal receiving part 7) for downloading image information from the camera (camera 6; also see below for further explanation); and



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a converter (inherent within the signal receiving part 7, see below for further explanation) converting signals from the digital electrical signal interface (signal receiving part 7) to radiation signals (see below for further explanation); and

an enclosure (waterproof case 1, figure 1, and 21, figure 3) hermetically sealing water and air tight (see arguments above) both the digital electronic camera (camera 6) and the converter (inherent with the signal receiving part 7), the enclosure (1 and 21) being transparent in at least an area of an optical lens (light transmission window 9, figure 1, and 24, figure 3) of the digital electronic camera (camera 6) so that pictures may be taken through the enclosure (1 and 21).

The camera system of Kamata et al. is clearly shown in figure 3. The camera system is comprised of both the waterproof case (21) for enclosing the camera (6) and the wireless remote controller (23) for controlling the camera (6). The camera (6) is an electronic camera wherein the light received into the waterproof case (21), by means of the light transmitting window (24), is converted into an electrical signal and taped onto a video tape. The wireless remote controller (23) controls the camera (6), by means of the electrical signal interface (signal receiving part 7) located within the camera (6), so as to control the recording of the electrical signal onto the video tape. The video tape can be removed from the camera (6) to be viewed at a later time. Therefore, the electronic camera (6) has an electrical signal interface (signal receiving part 7) for downloading image information from the camera (6).

A converter is inherent with the electrical signal interface (signal receiving part 7). The wireless control signal transmitted to the camera (6) from the wireless remote controller (23) is received by the electrical signal interface (signal receiving part 7) within the camera (6). If a

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converter were not present within the electrical signal interface (signal receiving part 7), it would be impossible to receive the wireless signals. A converter is an essential element in wireless transmitting and receiving circuits.

All electrical signals, in electronic circuits, are radiation signals and require special shielding as mandated by the Federal Communications Commissions. Therefore, the converter, as described above, does in fact convert the wireless signals received at the electrical signal interface (signal receiving part 7) into radiation signals, communicated by leads on a printed circuit board. Electrical signals, in electronic circuits, are not limited to the leads, designated for them on the printed circuit boards; rather they radiate away from their respective channels and cause interference and crosstalk in other channels.

In summary, Kamata et al. disclose a transparent light receiving window (24) in the enclosure (1 and 21) for receiving the wireless control signals from the wireless remote controller (26) so that the wireless control signals may be converted into radiation signals, by the converter, disposed within the electrical signal interface (signal receiving part 7). However, Kamata et al. do not disclose the a radiation signal output of the converter so that radiation signal containing image information are communicable exterior to the enclosure.

Ford et al. also disclose, as shown in figures 1 and 4, a waterproof camera system comprised of an enclosure (90) for enclosing a camera (82) and an electrical signal interface (84). As stated in column 2 (lines 34 – 37), a cable (12) is attached to the electrical signal interface (84), by means of the enclosure (90), so as to transmit image signals, generated by the camera (82), to a receiving end for display. Since all electrical signals are radiation signals, as described previously, Ford et al. teach communicating radiation signals containing image signals

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to the exterior of the enclosure (90). As stated in column 1 (lines 30 – 35), at the time the invention was made, one with ordinary skill in the art would have been motivated to communicate radiation signals containing image signals to the exterior of an enclosure housing a camera, as taught by Ford et al., through the transparent light receiving window (24) of the enclosure (21), as disclosed by Kamata et al., as a means to provide an underwater viewing system capable of transmitting real-time images of the underwater scene to display. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have communicated radiation signals containing image signals to the exterior of an enclosure housing a camera, as taught by Ford et al., through the transparent light receiving window of the enclosure, as disclosed by Kamata et al.

20. As for **Claim 10**, Kamata et al. disclose, as clearly shown in figure 3, that the camera system is comprised of both the waterproof case (21) for enclosing the camera (6) and the wireless remote controller (23) for controlling the camera (6). The camera (6) is an electronic camera wherein the light received into the waterproof case (21), by means of the light transmitting window (24), is converted into an electrical signal and taped onto a video tape. The wireless remote controller (23) controls the camera (6), by means of the electrical signal interface (signal receiving part 7) located within the camera (6), so as to control the recording of the electrical signal onto the video tape. The video tape can be removed from the camera (6) to be viewed at a later time. Therefore, the electronic camera (6) has an electrical signal interface (signal receiving part 7) for downloading image information from the camera (6).

Thus, although a shutter circuit for activating the shutter, to which a shutter circuit connection may be suitably made, is not explicitly disclosed by Kamata et al., a shutter whether

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mechanical or electronic is inherent to all cameras. Since, the wireless remote controller (23) is external to the enclosure (1 and 21) and is provided for controlling the camera (6), Kamata et al. also disclose a trigger circuit, also within the enclosure and electrically connected to the shutter circuit of the digital electronic camera (6), responsive to a stimulus external to the enclosure to produce an electrical signal responsively to which the shutter circuit will activate the shutter of the digital electronic camera (6).

21. For **Claim 12**, Kamata et al. disclose, as shown in figures 2, 3, and 4 and as stated in columns 2 (lines 52 – 57), 3 (lines 15 – 26 and 47 – 67), and 4 (lines 1 – 43), a method of communicating with a sealed digital electronic camera comprising:

hermitically housing (by means of waterproof case 1, figure 1, and 21, figure 3; see arguments above) a digital electronic camera (camera 6) having a digital electrical signal interface (signal receiving part 7) for downloading image information from the camera (camera 6; also see below for further explanation) in a housing that is optically transparent in at least an area of a lens (light transmission window 9, figure 1, and 24, figure 3) of the digital electronic camera (camera 6) so that pictures may be taken through the housing (1 and 21) and transparent to radio (7):

converting signals (inherent within the signal receiving part 7, see below for further explanation) from the digital electrical signal interface (signal receiving part 7) to radio signals (see below for further explanation).

The camera system of Kamata et al. is clearly shown in figure 3. The camera system is comprised of both the waterproof case (21) for enclosing the camera (6) and the wireless remote controller (23) for controlling the camera (6). The camera (6) is an electronic camera wherein

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the light received into the waterproof case (21), by means of the light transmitting window (24), is converted into an electrical signal and taped onto a video tape. The wireless remote controller (23) controls the camera (6), by means of the electrical signal interface (signal receiving part 7) located within the camera (6), so as to control the recording of the electrical signal onto the video tape. The video tape can be removed from the camera (6) to be viewed at a later time.

Therefore, the electronic camera (6) has an electrical signal interface (signal receiving part 7) for downloading image information from the camera (6).

A converter is inherent with the electrical signal interface (signal receiving part 7). The wireless control signal transmitted to the camera (6) from the wireless remote controller (23) is received by the electrical signal interface (signal receiving part 7) within the camera (6). If a converter were not present within the electrical signal interface (signal receiving part 7), it would be impossible to receive the wireless signals. A converter is an essential element in wireless transmitting and receiving circuits.

All electrical signals, in electronic circuits, are radiation signals and require special shielding as mandated by the Federal Communications Commissions. Therefore, the converter, as described above, does in fact convert the wireless signals received at the electrical signal interface (signal receiving part 7) into radiation signals, communicated by leads on a printed circuit board. Electrical signals, in electronic circuits, are not limited to the leads, designated for them on the printed circuit boards; rather they radiate away from their respective channels and cause interference and crosstalk in other channels

The Examiner interprets radiation signals to include all signals in the electromagnetic spectrum capable of becoming signals in an electronics circuit. Thus, radiation signals encompass optical frequency radiation signals and radio frequency radiation signals. .

Kamata et al. disclose a transparent light receiving window (24) in the enclosure (1 and 21) for receiving the wireless control signals from the wireless remote controller (26) so that the wireless control signals may be converted into radio signals, by the converter, disposed within the electrical signal interface (signal receiving part 7). However, Kamata et al. do not disclose a method for communicating the radio signal through the housing.

Ford et al. also disclose, as shown in figures 1 and 4, a waterproof camera system comprised of a housing (90) for housing a camera (82) and an electrical signal interface (84). As stated in column 2 (lines 34 – 37), a cable (12) is attached to the electrical signal interface (84), by means of the housing (90), so as to transmit image signals, generated by the camera (82), to a receiving end for display. Since all electrical signals are radiation signals, as described previously, Ford et al. teach communicating radiation signals containing image signals to the exterior of the housing (90). As stated in column 1 (lines 30 – 35), at the time the invention was made, one with ordinary skill in the art would have been motivated to communicate radiation signals to the exterior of a housing for a camera, as taught by Ford et al., through the transparent light receiving window (24) of the housing (21), as disclosed by Kamata et al., as a means to provide an underwater viewing system capable of transmitting real-time images of the underwater scene to display. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have communicated radiation signals to the

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exterior of a housing for a camera, as taught by Ford et al., through the transparent light receiving window of the housing, as disclosed by Kamata et al.

22. As for **Claims 13 – 15**, Kamata et al. in view of Ford et al. teach of a waterproof digital electronic camera system and method of operating thereof according to Claims 1 and 12, the combination is silent with respect to the digital electronic signal interface (signal receiving part 7) of said digital electronic camera (6) as specifically being a serial digital electronic interface.

**Official Notice** is taken that both the concepts and advantages transmitting digital signals in either a parallel fashion or a serial fashion (including RS-232 or USB) are well known and expected in the art. Thus, it would have been obvious to one of ordinary skill in the art to include a serial digital electrical interface in the digital electronic camera system of Kamata et al. in view of Ford et al. in order to transmit image information using a connection that using less space in the physical circuit architecture, a connection that is less prone to crosstalk at higher frequencies, a connection with a reduced clock skew between the different channels, and a connection that can be faster. Since, it is obvious to use a serial digital electrical interface, the converter must also handle signals in a serial fashion.

23. As for **Claim 17**, Kamata et al. disclose, as clearly shown in figure 3, that the camera system is comprised of both the waterproof case (21) for enclosing the camera (6) and the wireless remote controller (23) for controlling the camera (6). The camera (6) is an electronic camera wherein the light received into the waterproof case (21), by means of the light transmitting window (24), is converted into an electrical signal and taped onto a video tape. The wireless remote controller (23) controls the camera (6), by means of the electrical signal interface (signal receiving part 7) located within the camera (6), so as to control the recording of

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the electrical signal onto the video tape. The video tape can be removed from the camera (6) to be viewed at a later time. Therefore, the electronic camera (6) has an electrical signal interface (signal receiving part 7) for downloading image information from the camera (6).

Thus, although a shutter circuit for activating the shutter, to which a shutter circuit connection may be suitably made, is not explicitly disclosed by Kamata et al., a shutter whether mechanical or electronic is inherent to all cameras. Since, the wireless remote controller (23) is external to the enclosure (1 and 21) and is provided for controlling the camera (6), Kamata et al. also disclose a trigger circuit, also within the enclosure and electrically connected to the shutter circuit of the digital electronic camera (6), responsive to a stimulus external to the enclosure to produce an electrical signal responsively to which the shutter circuit will activate the shutter of the digital electronic camera (6).

24. **Claims 8 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamata et al. in view of Ford et al. in further view of Fraker et al.

25. As for **Claim 8**, Kamata et al. in view of Ford et al. teach in combination of a waterproof digital electronic camera according to the requirements in claim 1, however, the combination is silent with respect to the potting of the camera (6) and converter (inherent within the signal receiving part 7) in an optically clear dielectric material.

Fraker et al., however, teaches, as stated in column 3 (lines 4 – 40), the potting (encapsulation) of a camera system and its components in a clear dielectric material (plastic material). As stated in column 1 (lines 28 – 31), at the time the invention was made, one with ordinary skill in the art would have been motivated to apply the teaching of potting a camera and



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its components in a clear dielectric material, as taught by Fraker et al., to the waterproof digital electronic camera system, of Kamata et al. in view of Ford et al., as a means to house the camera so that it is adequately protected against shock and certain chemical environments. Thus, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to apply the teaching of potting a camera and its components in a clear dielectric material, as taught by Fraker et al., to the waterproof digital electronic camera system, of Kamata et al. in view of Ford et al.

26. As for **Claim 9** (please see objection above), Fraker et al. teach, as stated in column 3 (lines 4 – 40), that the potting material is a plastic material such as urethane, silicone, polystyrene, etc. The Examiner interprets a plastic material as consisting essentially of both plastic and polycarbonate plastic groups. The motivation to include Fraker et al. can be found in the rejection of Claim 8.

27. **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Fraker et al. in view of Ford et al.

28. As for **Claim 20**, Fraker et al. that communication of image data from the camera to the exterior of the solid mass is via a wired link; hence, Fraker et al. does not disclose a radio link.

On the other hand, Ford et al. also disclose, as shown in figures 1 and 4, a waterproof camera system comprised of a housing (90) for housing a camera (82) and an electrical signal interface (84). As stated in column 2 (lines 34 – 37), a cable (12) is attached to the electrical signal interface (84), by means of the housing (90), so as to transmit image signals, generated by the camera (82), to a receiving end for display. Since all electrical signals are radiation signals,

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as described previously, Ford et al. teach communicating radiation signals containing image signals to the exterior of the housing (90). As stated in column 1 (lines 30 – 35), at the time the invention was made, one with ordinary skill in the art would have been motivated to communicate radiation signals to the exterior of a housing for a camera, as taught by Ford et al., through the transparent light receiving window (24) of the housing (21), as disclosed by Fraker et al., as a means to provide an underwater viewing system capable of transmitting real-time images of the underwater scene to display. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have communicated radiation signals to the exterior of a housing for a camera, as taught by Ford et al., through the transparent light receiving window of the housing, as disclosed by Fraker et al.

The Examiner interprets radiation signals to include all signals in the electromagnetic spectrum capable of becoming signals in an electronics circuit. Thus, radiation signals encompass optical frequency radiation signals and radio frequency radiation signals.

***Allowable Subject Matter***

29. **Claims 2 – 7, 11, 16, 18, and 21** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

30. As for **Claim 2**, the prior art discloses a waterproof digital electronic camera system as in Claim 1, including the interpretation that radiation signals to include all signals in the electromagnetic spectrum capable of becoming signals in an electronics circuit; wherein radiation signals encompass optical frequency radiation signals and radio frequency radiation

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signals. However, the prior art does not teach or fairly suggest the circuitry as claimed in Claim 2 to generate those signals.

31. As for **Claim 4**, the prior art discloses a waterproof digital electronic camera system as in Claim 1. However, the prior art does not teach or fairly suggest a rechargeable power source for providing power to the digital electronic camera and a charging circuit for converting stimuli external to the enclosure to a power suitable to recharge the rechargeable power source.

32. As for **Claims 11 and 18**, the prior art discloses a waterproof digital electronic camera system as in Claims 1 and 10. However, the prior art does not teach or fairly suggest a waterproof digital electronic camera system including the specifics of trigger circuitry including a light-emitting device and a photosensor device including a line-of-sight optical link.

33. As for **Claim 16**, the prior art discloses a waterproof digital electronic camera system as in Claims 12 and 13. However, the prior art does not teach or fairly suggest a RS-232 to TTL signal converter or an encoder-decoder converting the TTL signals to optical signals, and an electrical-optical signal converter for transmitting the optical signals through a transparent area of the enclosure.

34. As for **Claim 21**, the prior art discloses a digital camera system as in Claim 19. However, the prior art does not teach or fairly suggest the communication of image data from the camera to the exterior of the solid mass via an opto-mechanical link.

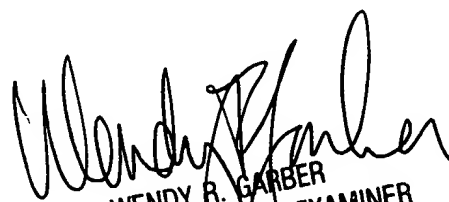
***Conclusion***

35. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 703.305.8090. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 5:30 PM and on alternating Fridays from 7:30 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wendy R Garber can be reached on 703.305.4929. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM  
November 15, 2004

  
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